

## CLAIMS:

1. A method of image registration comprising the steps of:
  - providing at least first image data and second image data,
  - selecting of sub-volumes of the first and the second image data,
  - performing a registration for each one of the sub-volumes, each registration
- 5 providing a transformation parameter set,
  - performing a global registration for the first and second image data, the global registration providing a global transformation parameter set,
  - comparing one of the transformation parameter sets to other transformation
- 10 outlier transformation parameter set of the transformation parameter sets,
  - outputting of a signal being indicative of the sub-volume of the outlier transformation parameter set.
2. The method of claim 1, whereby the first image data and / or the second image
- 15 data is provided by X-ray imaging, magnetic resonance imaging, computer tomography imaging, functional MRI, single photon emission computer tomography or positron emission tomography.
3. The method of claim 1 or 2, whereby the selection of the sub-volumes is
- 20 performed manually by means of a graphical user interface.
4. The method of claim 1, 2 or 3, whereby the selection of the sub-volumes is performed by means of an image segmentation step.
- 25 5. The method of anyone of the preceding claims 1 to 4, further comprising calculating a mean distance measure of the one of the transformation parameter sets to the other transformation parameter sets and to the global transformation parameter set, whereby the comparison of the one of the transformation parameter sets with the other transformation parameter sets and the global transformation parameter set is performed on the basis of the

mean distance measure for determining whether the one of the transformation parameter sets is an outlier transformation parameter set.

6. The method of claim 5, whereby the one of the transformation parameter sets is identified as an outlier transformation parameter set, if the mean distance measure of the one of the transformation parameter sets is greater than a threshold distance value.

7. The method of anyone of the preceding claims 1 to 5, further comprising cutting off of the sub-volume of the outlier transformation parameter set.

8. The method of anyone of the preceding claims 1 to 7, further comprising performing an elastic image registration in response to the signal.

9. Computer program product, in particular digital storage medium, comprising program means for registration of at least first image data and second data, the program means being adapted to perform the steps of:

- storing of a selection of sub-volumes of the first and second image data,
- performing a registration for each one of the sub-volumes, each registration providing a transformation parameter set,
- performing a global registration for the first and second image data, the global registration providing a global transformation parameter set,
- comparing one of the transformation parameter sets to other transformation parameter sets and/or to the global transformation parameter set for identification of an outlier transformation parameter set of the transformation parameter sets,
- outputting of a signal being indicative of the sub-volume of the outlier transformation parameter set.

10. A medical image data processing apparatus comprising:

- a memory for a storage of at least first and second image data,
- means for selecting of sub-volumes of the first and second image data,
- means for performing a registration for each one of the sub-volumes and for a global registration of the first and second image data, each registration providing a transformation parameter set,

- means for identification of an outlier transformation parameter set of the transformation parameter sets on the basis of the transformation parameter sets,
- means for outputting of a signal being indicative of the sub-volume of an identified outlier transformation parameter set.

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11. The medical image data processing apparatus of claim 10, further comprising a graphical user interface for selection of the sub-volumes.

12. The medical image data processing apparatus of claims 10 or 11, further  
10 comprising means for image segmentation for the selection of the sub-volumes.

13. The medical image data processing apparatus of claims 10, 11 or 12, further comprising means for elastic image registration for performing of an elastic image registration when an outlier transformation parameter set has been identified.